



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,151	04/05/2006	Bjarne Anders Heggset	2005_2004A	6577
513 7590 10/10/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER LIN, KUANG Y	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 10/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,151

Applicant(s)

HEGGSET ET AL.

Examiner

Kuang Y. Lin

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1725

1. The specification is again objected to in that it contains numeral non-idiomatic expression. For example, it refers "cast strand" or "cast ingot" as "extrusion ingot". It is noted that the strand or ingot is cast rather than extruded. Applicant is required to correct these and other errors which might occur throughout the specification.

2. Claims 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 29 and 30, there is a lack of antecedent basis in the specification (nor in the drawings) for the claimed feature of "intermediate metal reservoir **has an open top**". In claim 31, it is not clear what is claimed and where the antecedent in the specification for the claimed feature.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1725

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 21-23, 25-27 and 29-30 insofar as definite are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 62-110,851.

JP '851 substantially shows the invention as claimed except that it does not disclose to provide an approximate zero metallostatic pressure against the mold wall. However, it would have been obvious to those of ordinary skill in the art to obtain the optimal pressure through routine experimentation. With respect to claims 22, 26, 27, it would have been obvious to provide a valve in a dispensing system wherever it deems necessary.

6. Claims 21-31 insofar as definite are also rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,071,072 to McCubbin in view of JP 62-110,851.

McCubbin substantially shows the invention as claimed except that he does not show to regulate the molten metal such that the metallostatic pressure against the mold wall is approximate zero. However, JP '851 disclose to provide a vacuum chamber to a molten metal supply path to a continuous casting mold and evacuating the inside of the chamber to suck the molten metal such that the metallostatic pressure against the mold wall is decreased. The process of JP '851 has an advantage of speeding up the casting process as well as improving the ingot quality. It would have been obvious to provide the molten metal dispensing system of JP '851 in the apparatus of McCubbin in view of the advantage. It would have been obvious to those of ordinary skill in the art to

Art Unit: 1725

obtain the optimal pressure through routine experimentation. With respect to claims 24 and 28, it is conventional to provide permeable rings in the DC mold for supplying lubricant. With respect to claims, 22, 26, 27, it would have been obvious to provide a valve in a dispensing system wherever it deems necessary.

7. Applicant's arguments filed September 24, 2007 have been fully considered but they are not persuasive.

a. Applicant in page 10, 3rd paragraph of the response stated that in JP '851 it is only possible to adjust the metal level in the holding furnace above the mold. However, it clearly shows in figure 1 of JP '851 that the metal level can be adjust in the vacuum chamber 9. The arrangement of vacuum chamber 9 in apparatus of JP '851 is the same as the distribution chamber 5 of the instant application (see figure 2 of the instant application). Thus, they both perform the same function.

b. Applicant in page 10, last paragraph of the response stated that the molten metal in McCubbin is held at 2.5 and 4 inches above the hot-top section of the mold and thus the metallostatic pressure is held at a level that would correspond to a pressure far above zero in the solidification zone of the metal in the mold. Applicant further stated that McCubbin has no counter-pressure means for controlling the pressure. However, JP '851 does show to use vacuum means for controlling metallostatic pressure in the mold. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are

Art Unit: 1725

based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan J. Johnson can be reached on 571-272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kuang Y. Lin/
Primary Examiner
Art Unit 1725

10-2-07